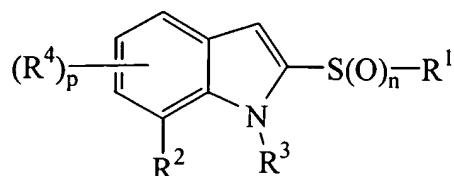


WHAT IS CLAIMED IS:

1. A compound of the formula:



or a pharmaceutically acceptable salt thereof,

wherein

n is 0, 1 or 2;

p is 1 or 2;

R¹ is aryl or heteroaryl;

R² is a heterocyclyl;

R³ is hydrogen, alkyl, or -C(=O)-R⁵, where R⁵ is alkyl, alkoxy, aryl, or aryloxy;

and

each R⁴ is independently hydrogen, hydroxy, cyano, alkyl, alkoxy, thioalkyl,

alkylthio, halo, haloalkyl, hydroxyalkyl, nitro, alkoxycarbonyl,

alkylcarbonyl, alkylsulfonyl, arylsulfonyl, haloalkylsulfonyl, amino,

alkylamino, dialkylamino, alkyl(aryl)amino, alkylaminocarbonyl,

alkylcarbonylamino, alkylcarbonyl(alkylamino), alkylaminosulfonyl,

alkylsulfonylamino or methylenedioxyhydrogen, alkyl, alkoxy, halo, or

haloalkyl.

2. The compound according to Claim 1, wherein p is 1 and R⁴ is located at the 6-position of the indole ring system.

3. The compound according to Claim 1, wherein R² is optionally substituted piperazin-1-yl or optionally substituted piperidin-4-yl.

4. The compound according to Claim 3, wherein R² is piperazin-1-yl, 4-methylpiperazin-1-yl, 3,5-dimethylpiperazin-1-yl, N-methyl piperidin-4-yl or piperidin-4-yl.

5. The compound according to Claim 4, wherein R² is 4-methylpiperazin-1-yl.

1 6. The compound according to Claim 3, wherein R¹ is optionally substituted
2 phenyl or optionally substituted thienyl.

1 7. The compound according to Claim 6, wherein R¹ is thien-2-yl or phenyl
2 which is optionally substituted with alkyl, halo or haloalkyl.

1 8. The compound according to Claim 7, wherein R¹ is phenyl, 2,3-
2 dichlorophenyl, 2-fluorophenyl, 2-methylphenyl, 2-trifluoromethylphenyl, 3-bromophenyl, or
3 thien-2-yl.

1 9. The compound according to Claim 6, wherein n is 2.

1 10. The compound according to Claim 9, wherein R³ is hydrogen, methyl, or –
2 C(=O)–R⁵, where R⁵ is alkoxy.

1 11. The compound according to Claim 1, wherein R¹ is thienyl or phenyl
2 which is optionally substituted with a substituent selected from the group consisting of alkyl,
3 halo and haloalkyl.

1 12. The compound according to Claim 11, wherein R¹ is phenyl, 2,3-
2 dichlorophenyl, 2-fluorophenyl, 2-methylphenyl, 2-trifluoromethylphenyl, 3-bromophenyl or
3 thien-2-yl.

1 13. The compound according to Claim 11, wherein n is 2.

1 14. The compound according to Claim 13, wherein R² is optionally substituted
2 piperazin-1-yl or optionally substituted piperidin-4-yl.

1 15. The compound according to Claim 14, wherein R² is piperazin-1-yl, 4-
2 methylpiperazin-1-yl, 3,5-dimethylpiperazin-1-yl, N-methyl piperidin-4-yl or piperidin-4-yl.

1 16. The compound according to Claim 15, wherein R³ is hydrogen, methyl or
2 –C(=O)–R⁵, where R⁵ is alkoxy.

1 17. The compound according to Claim 1, wherein n is 2.

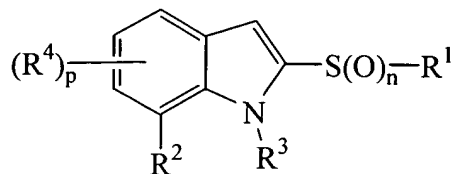
1 18. The compound according to Claim 17, wherein R^1 is thienyl or phenyl
2 which is optionally substituted with a substituent selected from the group consisting of alkyl,
3 halo, haloalkyl, and a mixture thereof.

1 19. The compound according to Claim 18, wherein R^2 is optionally substituted
2 piperazin-1-yl or optionally substituted piperidin-4-yl.

1 20. The compound according to Claim 19, wherein R^3 is hydrogen, methyl or
2 $-C(=O)-R^5$, where R^5 is alkoxy.

1 21. The compound according to Claim 1, wherein said compound is 2-
2 benzenesulfonyl-7-(4-methylpiperazin-1-yl)-1H-indole.

1 22. A method for producing a 2-substituted indole of the formula:



2 wherein
3

4 n is 0, 1, or 2;

5 p is 1 or 2;

6 R^1 is aryl or heteroaryl;

7 R^2 is a heterocycle optionally protected with a protecting group;

8 R^3 is hydrogen, alkyl, or $-C(=O)-R^5$, where R^5 is alkyl, alkoxy, aryl or aryloxy;

9 and

10 each R^4 is independently hydrogen, hydroxy, cyano, alkyl, alkoxy, thioalkyl,

11 alkylthio, halo, haloalkyl, hydroxyalkyl, nitro, alkoxycarbonyl,

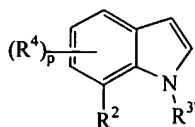
12 alkylcarbonyl, alkylsulfonyl, arylsulfonyl, haloalkylsulfonyl, amino,

13 alkylamino, dialkylamino, alkyl(aryl)amino, alkylaminocarbonyl,

14 alkylcarbonylamino, alkylcarbonyl(alkylamino), alkylaminosulfonyl,

15 alkylsulfonylamino or methylenedioxy;

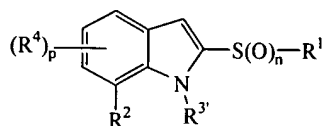
16 said method comprising contacting a substituted indole of the formula:



wherein $R^{3'}$ is alkyl or $-C(=O)-R^5$,

(i) with a base to produce a deprotonated indole; and

(ii) contacting the deprotonated indole with a sulfonylating agent of the formula: $Y-SO_2-R^1$, where Y is halide, or a disulfide agent of the formula: $R^1-S-S-R^1$ to produce 2-substituted indole of the formula:



(iii) optionally oxidizing the sulfur with an oxidizing agent; and

(iv) optionally removing the protecting group to produce the 2-substituted indole.

23. The method of Claim 22, wherein Y is fluorine.

24. A composition comprising:

- (a) a therapeutically effective amount of a compound of Claim 1; and
- (b) a pharmaceutically acceptable carrier.

25. A method for treating a CNS disease state in a subject, said method comprising administering to said subject a therapeutically effective amount of a compound of Claim 1.

26. The method of Claim 25, wherein the disease state comprises psychoses, schizophrenia, manic depressions, neurological disorders, memory disorders, attention deficit disorder, Parkinson's disease, amyotrophic lateral sclerosis, Alzheimer's disease and Huntington's disease.

27. A method for treating a disorder of the gastrointestinal tract in a subject, said method comprising administering to said subject a therapeutically effective amount of a compound of Claim 1.

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28. A method for treating obesity in a subject, said method comprising
administering to said subject a therapeutically effective amount of a compound of Claim 1.